

(12) **United States Patent**
Baun et al.

(10) **Patent No.:** **US 7,277,223 B2**
(45) **Date of Patent:** **Oct. 2, 2007**

(54) **APPARATUS AND METHODS FOR FOCUSING AND COLLIMATING TELESCOPES**

(75) Inventors: **Kenneth W. Baun**, Trabuco Canyon, CA (US); **Brian Tingey**, Fountain Valley, CA (US); **Ghassan El-Khatib**, Long Beach, CA (US)

(73) Assignee: **Meade Instruments Corporation**, Irvine, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **11/341,790**

(22) Filed: **Jan. 27, 2006**

(65) **Prior Publication Data**

US 2006/0132908 A1 Jun. 22, 2006

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/899,221, filed on Jul. 26, 2004.

(60) Provisional application No. 60/684,631, filed on May 25, 2005.

(51) **Int. Cl.**

G02B 23/00 (2006.01)

(52) **U.S. Cl.** **359/399**; 359/425

(58) **Field of Classification Search** 359/399
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,123,136 A	10/1978	Dahab et al.
4,342,503 A	8/1982	Shafer
5,133,050 A	7/1992	George et al.
5,150,260 A	9/1992	Chigira
5,191,469 A	3/1993	Margolis
5,465,170 A	11/1995	Arimoto

5,734,516 A	3/1998	Sayede
6,061,175 A	5/2000	Watters
6,278,100 B1	8/2001	Friedman et al.
6,323,996 B1	11/2001	Watters
6,327,081 B1 *	12/2001	Persha 359/425
6,369,942 B1	4/2002	Hedrick et al.

(Continued)

FOREIGN PATENT DOCUMENTS

DE 10249177 A1 * 5/2004

(Continued)

OTHER PUBLICATIONS

International Searching Authority, Notification of Transmittal of the International Search Report and the Written Opinion of the International Searching Authority, for International Application No. PCT/US2006/020405, date of mailing Sep. 22, 2006 (9 pages).

Primary Examiner—Mark A. Robinson

Assistant Examiner—Lee Fineman

(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear, LLP

(57) **ABSTRACT**

A telescope capable of motorized focus and/or collimation. The telescope includes control electronics capable of correcting the focus and/or collimation based on identified information, such as, for example, information about optical or other elements of the telescope, information about a user or imaging device, or the like. In various embodiments, such identified information is acquired through radio frequency identification (RFID) technologies. In other embodiments, an automated system controls the actuators based at least in part upon identification information, such as through user or device recognition.

23 Claims, 7 Drawing Sheets

